Wisconsin DNR Fisheries Information Sheet

Stream: Eagle Creek **County:** Marinette **Year:** 2018

Regulation: Yellow **Size Limit:** All trout = 8 inches **Daily Limit:** 3

Eagle Creek is a tributary stream that enters the Peshtigo River system between Caldron and High Falls Reservoirs. The watershed is primarily forested with many feeder streams located within Marinette County forest lands. Eagle Creek has a total length of 12.3 miles, an approximate surface area of 11.9 acres and an average width of 8 feet.

Brook trout were stocked annually from 1938 to 1974. Brown trout were stocked periodically between 1943 to 1950 and annually from 1959 to 1972. Since 1974 no trout have been stocked into Eagle Creek. Historically, natural reproduction of brook trout has occurred, but brown trout natural reproduction has been minimal.

Extensive habitat work was completed along a 1,320-foot segment of Eagle Creek downstream of the Eagle River Road crossing. In 1988, sand trap 5 feet deep and 100 feet long was constructed at the downstream section of the habitat rehabilitation area. Routine maintenance of the sand trap is required and was last completed in 2005. In 1989 and 1990, additional habitat work was completed on Eagle Creek above the sand trap. This work included the placement of 12 prefabricated bank covers and 150 large boulder retards. Rip rap was also placed along 360 feet of the bank covers.

Eagle Creek was sampled on July 25, 2018 to assess the brook trout fishery. A 0.50-mile section of the creek was sampled both upstream and downstream of the bridge crossing on Eagle River Road in the Town of Silver Cliff (T.34N. -R.18E. Section14) (Figure 1).

Figure 1. Sampling location on Eagle Creek.

Catch per Unit Effort (CPUE) and Length Frequency

CPUE is a relative abundance index which is often directly related to absolute abundance. Trout fisheries are routinely quantified using CPUE or the number and/or size of trout per mile. CPUE's can be used to compare streams by ecoregion or statewide. This is done by using percentiles (PCTL). For example, if a CPUE is in the 90th PCTL, CPUE is greater than 90% of the CPUE's in that ecoregion or across the state. CPUE percentiles may also be used to categorize trout abundance; 33rd (low abundance), 66th (moderate abundance), 90th (high abundance), and 95th (very high abundance).

The length frequency of trout describes the size structure of the sample or population and is the number of fish captured per 1-inch length group.

BROOK TROUT

A total of 180 brook trout was collected in Eagle Creek (Figure 2). Brook trout ranged in length from 2.3 to 10.6 inches and averaged 5.6 inches (Table 1). The number of brook trout collected increased between 2016 and 2018 and size structure remained stable (Table 1). One hundred twenty YOY/mile were collected in 2016 compared to 110 YOY/mile in 2018 (Table 1). Additionally, 15% of the brook trout collected in 2018 were greater than the 8-inch minimum length limit which was an increase from 11% in 2016 (Figure 2).

Overall, a decreasing trend of brook trout total CPUE has been observed between 2006 and 2018 (Figure 3). However, brook trout CPUE $\geq$ 8 inches has been relatively constant (Figure 3). In terms of abundance, brook trout $\geq$ 8 inches remain moderately high and is currently around the 85th PCTL compared to other streams in the Northern Lakes and Forests ecoregion (Table 1). Similarly, total brook trout CPUE is trending downwards between 2006 and 2018 but has remained above the 60th PCTL over the last decade (Table 1).

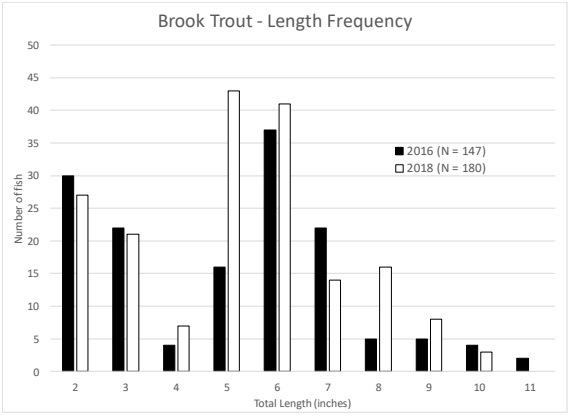

Figure 2. Length frequency of all brook trout collected in Eagle Creek in 2016 and 2018.

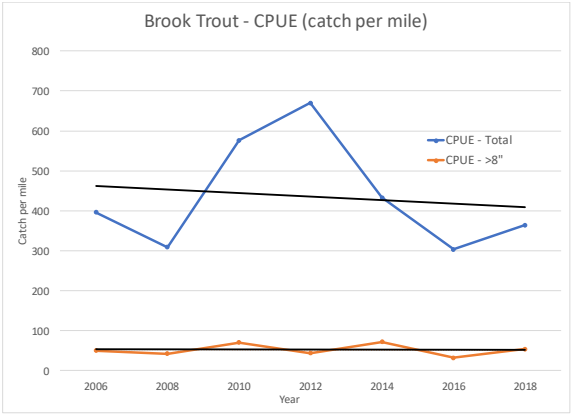

Figure 3. Total CPUE and CPUE of 8" brook trout collected from 2006 through 2018.

Table 1. Brook trout catch per unit effort (CPUE) and percentile (PCTL) by various length groups from 2006 through 2018 in Eagle Creek.

Year	Average Length (in)	Length Range	Number Collected	CPUE = catch per mile (PCTL - percentile)					
				Total (PCTL)	YOY	> 5" (PCTL)	> 8" (PCTL)	> 10" (PCTL)	> 12" (PCTL)
2006	6.0	2.4 - 11.6	197	396 (65)	84	310 (80)	50 (85)	4 (75)	0
2008	6.1	2.0 - 11.2	154	309 (60)	68	240 (75)	42 (80)	10 (85)	0
2010	6.2	3.3 - 13.2	287	576 (75)	78	496 (90)	70 (90)	6 (80)	2 (95)
2012	5.1	2.2 - 12.0	334	670 (80)	286	382 (85)	44 (80)	8 (80)	2 (95)
2014	6.6	2.3 - 12.4	205	433 (65)	62	370 (85)	72 (90)	10 (85)	2 (95)
2016	5.5	2.1 - 11.8	147	303 (60)	120	182 (65)	32 (75)	12 (90)	0
2018	5.6	2.3 - 10.6	180	364 (60)	110	250 (75)	54 (85)	6 (80)	0

DISCUSSION

The Eagle Creek supports a quality brook population that has been sustained by natural reproduction since 1974. Between 2016 and 2018, there was a negligible difference in the number of brook trout YOY collected (Figure 2 and Table 4). However, brook trout YOY CPUE was lower in 2014 but did not result in a noticeable impact to the number of trout (as indicated by Total CPUE & PCTL) in future years (Table 1).

CONCLUSIONS & RECOMMENDATIONS

WDNR installed 12 bank covers downstream of 25th Road in 1989 and 1990. Most of these structures have collapsed or filled in with sand. In 2015, woody debris and shrubs encroaching on the bank covers was also removed. The bank covers were inspected in July 2018 and a few holes were observed. Plans to perform maintenance to this area should be addressed during the next work planning cycle.

The brook trout fishery in Eagle Creek is stable and continues to offer anglers an excellent trout fishing opportunity. The current fishing regulations (3 fish daily bag; 8" minimum length limit (MLL)) appears to be adequate.

Questions regarding fisheries management activities for Eagle Creek:

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